



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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Commissioner

August 13, 2014

Ms. Karla Sangrey, Engineer-Director/
Treasurer
Upper Blackstone Water Pollution
Abatement District
50 Route 20
Millbury, MA 01527-2199

RE: Millbury
Transmittal No.: X259385
Application No.: CE-14-006
Class: *OP*
FMF No.: 132269
AIR QUALITY PLAN
APPROVAL MODIFICATION

Dear Ms. Sangrey:

The Massachusetts Department of Environmental Protection (“MassDEP”), Bureau of Waste Prevention, has reviewed your Limited Plan Application (“Application”) listed above. This Application concerns the proposed modification of the Limited Plan Approval Tr. No. X234253 at the Upper Blackstone Water Pollution Abatement District - Sludge Handling Facility Biofilter located at 50 Route 20 in Millbury, Massachusetts (“Facility”).

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 “Air Pollution Control,” regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP’s review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval Modification** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (“Permittee”) must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

The Upper Blackstone Water Pollution Abatement District (“the Permittee”) owns and operates a wastewater treatment facility in Millbury, Massachusetts. Operations include wastewater treatment, sewage sludge storage and dewatering and sewage sludge incineration. The Permittee submitted a limited plan application on January 5, 2011 indicating the intent to modify the odor control system for their sludge storage and dewatering operations. The Permittee’s proposal was to replace a regenerative thermal oxidizer (RTO) that had been used for odor control from sludge handling with a custom engineered biofilter. Odorous emissions from sludge handling include emissions of ammonia, dimethyl sulfide, hydrogen sulfide and methyl mercaptan. Limited Plan Approval Tr. No. X234253 was issued on March 10, 2011 for a biofilter to treat odorous air from the Facility’s sludge handling facilities in place of the RTO. Among other things, the Plan Approval set instantaneous emission limits for hydrogen sulfide and dimethyl sulfide as indicators of odor.

The Permittee submitted an application on March 31, 2014 to modify the Limited Plan Approval Tr. No. X234253 to increase the empty bed retention time from 25 seconds to 45 seconds when two beds are operating and increase the emission limit for dimethyl sulfide from 0.1 ppmv to 0.4 ppmv. This Plan Approval modifies LPA Tr. No. X234253 as requested. The empty bed retention time was changed to correlate with the manufacturer’s recommended operating requirements. The dimethyl sulfide emission was changed to reflect the results of acceptance testing.

This Plan Approval supersedes the existing Limited Plan Approval Tr. No. X234253 in its entirety.

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
EU#	Description	Design Capacity	Pollution Control Device (PCD)
1	Sludge Handling Facility	22,500 to 27,500 cubic feet per minute	Biofilter

Table 1 Key:

EU# = Emission Unit Number

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2 below:

Table 2			
EU#	Operational / Production Limit	Air Contaminant	Emission Limit
1		Hydrogen sulfide	• 0.5 ppmv ¹
			• 0.29 tons per 12 month rolling period
		Dimethyl sulfide	• 0.4 ppmv ¹
			• 0.42 tons per 12 month rolling period

Table 2 Key:

EU# = Emission Unit Number

ppmv = parts per million by volume

Table 2 Notes:

1. Emissions of hydrogen sulfide and dimethyl sulfide are used as indicators of odor.

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 below:

Table 3	
EU#	Monitoring and Testing Requirements

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EU#	Monitoring and Testing Requirements
1	1. The Permittee shall test the biofilter exhaust for hydrogen sulfide by taking exhaust air grab samples and analyzing the sample using a portable hydrogen sulfide analyzer. The testing shall be done at least once per calendar month and once per week if hydrogen sulfide levels are found to be at 0.4 parts per million or higher.
	2. The Permittee shall test the biofilter exhaust for dimethyl sulfide by taking exhaust air grab samples and analyzing the samples by ASTM Method D5504 to determine total reduced sulfur compounds. The testing shall be done at least once per calendar month and once per week if hydrogen sulfide levels are found to be at 0.3 parts per million or higher.
	3. The Department at its discretion may require additional emission testing of the biofilter. Such testing shall consist of analyzing an agreed upon number of grab samples taken during one day. Hydrogen sulfide testing shall be performed using a portable hydrogen sulfide analyzer. Dimethyl sulfide testing shall be performed by taking samples of the outlet (treated) air and analyzing the samples by ASTM Method D5504 to determine total reduced sulfur compounds. Such testing may include, in addition, odor panel testing and on property and off property odor surveys or other testing required by MassDEP as may be necessary to ascertain the compliance status of the biofilter and sources of odor from the facility.
	4. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13
	5. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol.
	6. Within 60 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report.

Table 3 Key:

EU# = Emission Unit Number

Table 4	
EU#	Record Keeping Requirements

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EU#	Record Keeping Requirements
1	1. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15 th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping .
	2. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	3. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date Standard Operating and Maintenance Procedure for the EU and PCD approved herein on-site.
	4. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU, PCD and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	5. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU, PCD and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	6. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	7. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	8. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

EU# = Emission Unit Number

PCD = Pollution Control Device

Table 5	
EU#	Reporting Requirements

Table 5	
EU#	Reporting Requirements
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Central Regional Office of MassDEP, BWP Permit Chief by telephone: 508-767-2845, email: CERO.Air@massmail.state.ma.us, or fax : 508-792-7621, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report annually to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval. Emissions of dimethyl sulfide and hydrogen sulfide from EU#1 shall be included in the Source Registration/Emission Statement.

Table 5 Key:

EU# = Emission Unit Number

4. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to, and shall comply with, the following special terms and conditions:

- A. The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU#	Special Terms and Conditions
1	1. The Permittee shall not allow odors from the sludge handling facility to cause a condition of air pollution at any time.
	2. The Permittee shall maintain the empty bed retention time of the biofilter at a minimum of 45 seconds when operating on two beds.
	3. The Permittee shall assure the inlet air to the biofilter is humidified to a minimum of 95%.

Table 6	
EU#	Special Terms and Conditions
	4. The Permittee shall perform scheduled maintenance requiring the planned shutdown of one of the two beds between October and March. The Permittee shall notify MassDEP 10 days in advance of the shutdown.
	5. The Permittee shall operate and maintain the biofilter in accordance with the manufacturer's recommended Operation and Maintenance Management Plans. Biofilter media shall be replaced according to the manufacturer's recommended schedule or more frequently if necessary to prevent excessive odor emissions.
	6. This Plan Approval Tr. No. X259385, supersedes the Plan Approval Tr. No. X234253 issued to the Permittee on March 10, 2011 in its entirety, with the exception that all plan application materials submitted as part of the Plan Approval Tr. No. X234253 become part of Plan Approval Tr. No. X259385, unless superseded by plan application materials submitted as part of Plan Approval Tr. No. X259385.

Table 6 Key:

EU# = Emission Unit Number

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on the Emission Unit that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. The exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as "shanty caps" and "egg beaters." The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7 below, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU#	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions (feet)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)
1	125	3.167	47 - 57	40 - 95

Table 7 Key:

EU# = Emission Unit Number

°F = Degrees Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.

- K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Stephen Majkut by telephone at 508-767-2773, e-mail at stephen.majkut@state.ma.us or in writing at the letterhead address.

*This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.*

Stephen Majkut,
Environmental Engineer
Bureau of Waste Prevention

Roseanna E. Stanley,
Permit Chief
Bureau of Waste Prevention

Enclosure

ecc: Millbury Board of Health
Millbury Fire Department
MassDEP/Boston - Yi Tian
Dorothy K. Buckoski, Golder Associates